Usability perspective on social media sites' adoption in the B2B context

Abstract

While social media sites have been successfully adopted and used in the B2C context, they are perceived to be irrelevant in B2B marketing. This is due to marketers' perception of poor usability of these sites in the B2B sector. This study investigates the usability of social media sites when adopted for B2B marketing purposes in the one of world's largest social media market: China. Specifically, by extending the Technology Acceptance Model with Nielsen's Model of Attributes of System Acceptability, we assess the impact of usefulness, usability and utility on the adoption and use of these sites by B2B marketing professionals. The empirical investigation reveals that marketers' perception of the usefulness, usability and utility of social media sites drive their adoption and use in the B2B sector. The usefulness is subject to the assessment of whether social media sites are suitable means through which marketing activities can be conducted. The ability to use social media sites for B2B marketing purposes, in turn, is due to those sites learnability and memorability attributes.

Keywords: social media sites; Technology Acceptance Model; usability; technology adoption; B2B

1. Introduction

The past decade has seen a digital transformation that has driven marketing professionals' move from offline marketing and one-way online communication to a two-way interaction with consumers as enabled by Web 2.0. Social media sites,

building on the ideological and technological foundations of Web 2.0 (Kaplan and Haenlein, 2010), are the most popular internet-based applications used in the support of marketers' activities (Simula *et al*, 2013). This is because of the numerous benefits deriving from the utilisation of those sites for marketing purposes (Michaelidou *et al*, 2011). Those include but are not limited to effective consumer relationship management, greater consumer trust and consumer loyalty. Marketers operating in the business-to-consumer (B2C) sector seem to recognize those benefits and thus they increasingly adopt social media sites in support of marketing strategies. Business-to-business (B2B) marketing professionals, however, do not seem to share the enthusiasm of the B2C sector, as their adoption of social media sites for marketing purposes is rather slow (Kaplan and Haenlien, 2010; Swani *et al,* 2014).

The literature indicates, but does not explore, that this slow adoption of social media sites is directly related to marketers' perception of poor usability of those sites in B2B marketing (Buehrer *et al*, 2005; Jarvenien *et al*, 2012). Specifically, marketers claim that because of the characteristics of the B2B company (which the American Marketing Association defines as a business that markets its products or services to other businesses) and the nature of interactions between businesses partners, they find social media sites being irrelevant in B2B marketing (Swani and Brown, 2011; Michaelidou *et al*, 2011). This is confirmed by the most recent statistical data, which shows that marketers do not recognize the importance of those sites in B2B context. Specifically, as of May 2015 only 41% of B2B marketers considered LinkedIn as important platform on which marketing activities can be conducted, 30% valued Facebook whereas less than 20% recognized the application of Twitter to B2B marketing activities (Richter, 2015).

Despite this initial reluctance of B2B marketers to adopt or use social media sites for marketing, Brennen and Croft (2013) argue that those sites will have a growing importance in B2B marketing in the future. Hence, considering the growing role of social media sites in B2B marketing, it is imperative to fill in the gap in the literature and explore social media sites adoption by B2B marketing professionals. It is also pertinent to analyse the factors stimulating the adoption and use of those sites in the B2B context. Furthermore, as the usability of social media sites is the factor hindering the adoption of those sites in B2B marketing, it is of paramount importance to evaluate the adoption of social media sites from the perspective of those sites' usability. All of which is the aim of this study.

This remainder of this paper is organised as follows. To provide the context in which the research is conducted and highlight its importance, we present statistical data on the use of social media sites. We focus on the world's largest social media market, China. Next, in Section 2, we review the academic literature emphasising advantages arising from the utilisation of social media sites by marketing professionals to B2B companies. The advantages are contrasted with the disadvantages, and with the barriers preventing B2B marketers from adopting and using social media sites for marketing purposes. It is argued that the marketers' perception of usability of social media in the B2B context plays an important role when making an adoption decision. With this factor in mind, we develop a research framework and hypothesis based on the Technology Acceptance Model (TAM) and Nielsen's (1993) Model of Attributes of System Acceptability. Next in Section 3, we discuss research methodology. This is followed by data analysis (Section 4). In Section 5 we present a discussion of our research findings placed in the context of the

literature. We conclude with recommendations to theory and practice deriving from this study and research limitations.

1.1. Social media sites usage in China

Despite its government's policy of internet censorship, which prohibits the use of most western social media sites such as Facebook, Twitter and YouTube, China is now the world's largest social media market. This statement is verified by comparing statistical data on social media use in China and in western countries such as the US and the UK. Perhaps unsurprisingly, Facebook is the most popular social media site worldwide, with nearly 1.5 billion registered users as of November 2015 (Statista, 2015a). The second most popular social media site, however, is Chinese market specific: QQ (an instant messaging software) with 860 million active accounts (*ibid*). Users of Chinese-specific sites tend to be more active online than many western internet users. The statistical data shows that in 2014, access to social media sites in China exceeded that in the US and UK, making Asian habitual internet users, known as *netizens,* the heaviest consumers of social media sites globally (Ofcom, 2014). Such a heavy use of social media sites in China is directly related to the perception of those sites being a valuable source of information. Statistics show that in 2013 over 60% of Chinese internet users believed that social media sites were important sources of knowledge, whereas only 33% of users of UK and 32% of users of US-based social media sites regarded them as possible sources of information (Wiltfong, 2013).

Due to the popularity of social media sites marketing professionals operating in the B2C sector actively adopt social media for marketing whereas B2B marketers underestimate the importance of social media marketing. Such a reluctance to adopt social media for B2B marketing activities is noticeable in China. It is estimated that

among the top 500 Chinese companies, only over 40 per cent have some social media presence (e.g. blogging social media site) (Statista, 2015b). It is predicted however, that as the number of social media users in China grows, the number of companies present on social media sites should increase and so too should the adoption rates for social media by marketing professionals not only in the B2C sector but more interestingly B2B business environment. In this context the investigation of social media sites adoption by B2B Chinese marketers is an interesting and valuable research topic, not only for China-based companies but also for international businesses, which operate in or wish to enter the Chinese marketplace.

2. Literature review

2.1. Business-to-Business

American Marketing Association (2015) defines B2B companies as businesses, which market their products to other businesses, in contrast to B2C organizations, which sell their products directly to individual consumers. In the B2B sector, there are fewer organizations involved in business transactions than there are consumers engaged in B2C interaction. Because of the number of organizations taking part in those business transactions, the nature of interactions between B2B business partners also differs from that in the B2C sector. It is more direct and more intense than it is in the B2C context (Jussila *et al*, 2014). It is based on trust and a relationship established between industrial partners. Because of that B2B marketing is recognised as being vital to the success of B2B companies.

Traditionally, B2B marketing was carried out in an offline environment. In the past few decades B2B marketers have also incorporated a range of online platforms into their marketing strategies (Brennan and Croft, 2012). Those online platforms

were however restricted to one-way communications (e.g. company's website). In recent years, B2B marketing professionals have started using online communication channels, which enable two-way interaction between B2B partners. Among those, social media sites are increasingly receiving marketers' attention. This is confirmed by Brennan and Croft (2012) who report that 'there is extensive practitioner interest in the use of social media for B2B marketing', and hence many B2B companies plan to double their social media marketing budgets within the next five years (CMO, 2015)

This growing interest in B2B social media marketing seems to be directly related to the numerous advantages deriving from the utilisation of those sites to B2B companies. Before B2B marketers will be able to fully benefit from the application of social media for marketing purposes however, they have to recognise and address obstacles hindering the adoption and use of those sites in the B2B sector. All of which are outlined below.

2.2.Social media sites in B2B marketing; their advantages and obstacles

To date, research has shown that social media sites are effectively and efficiently used for a number of B2B marketing activities. Those include targeting and consumer relationship management (Moor *et al*, 2013). Specifically, it has been shown that B2B marketers successfully use social media sites to identify and attract new business partners (Michaelidou *et al*, 2011) and new business opportunities (Breslauer and Smith, 2009). They also effectively use social media sites to reach existing consumers and engage them in two-way communication, which industrial partners value. Such an online interaction enables marketers to obtain valuable feedback (Kaplan and Haenlein 2010), which when analysed allow them to better

tailor company's offering to industrial partners' needs. This in turn is directly related to an increased sales performance and greater return on investment.

Furthermore, research has shown that use of social media sites and a two-way communication between B2B companies allow marketers to deepen relationships with industrial partners (Jussila *et al*, 2012). This is because such a two-way online interaction creates the perception of the company being closer to its target market (Breslauer and Smith, 2009), which results in greater trust and loyalty (Mangol and Faulds, 2009). Effective consumer relationship management, trust established between B2B business partners and loyalty, in turn, are key to successful B2B transactions.

In addition to the above listed application of social media sites in B2B marketing, Kapland and Haenlein (2010) emphasises that B2B marketing professionals effectively employ these sites in branding strategies. On social media sites they can create a unique brand identity (Michaelidou *et al*, 2011) and brand loyalty (Rapp *et al*, 2013). Furthermore, they use those sites to direct traffic to a company's branded website (Breslauer and Smith, 2009), significantly increasing brand awareness worldwide (Den Bulte and Wuyts, 2007; Rapp *et al*, 2013).

Finally, Bughin *et al* (2009) report that the biggest advantage deriving from the utilization of social media sites by B2B marketers is the access to knowledge it affords. Research has shown that social media sites encourage tow-way communication and hence virtual co-creation (Simula, 2013). They also facilitate intra- and inter-organizational collaboration (Moor *et al*, 2013). This has a positive impact on innovation and product management, as it may result in the development of innovative offerings, which in turn can provide a company with a competitive advantage (Bughin *et al*, 2009; Jussila *et al* 2013). This view is further underscored

by McKinsey (2013), who suggests that B2B firms can increase sales innovations and reduce time to market if their marketers use social media sites.

Despite the numerous advantages arising from the use of social media sites by B2B marketing professionals, Swani *et al* (2014) note that B2B marketers 'struggle to implement successful social media strategies', and in fact many B2B marketers perceive those sites as being irrelevant in the B2B context (Michaelidou *et al*, 2011; Jervanien *et al,* 2012). This is because there is a common perception of B2B marketers that social media sites are more suitable for B2C sector and that they cannot support B2B marketing objectives (Buehrer *et al*, 2005; Jarvenien *et al*, 2012). This is due to the nature of the B2B business environment as well as several other barriers, both internal and external, which B2B marketers must face when incorporating social media sites into their strategies (Buehrer *et al*, 2005).

One of the biggest barriers deterring the adoption of social media sites in the B2B context is the marketers' poor understanding of how to use these sites for B2B marketing purposes (Lu *et al*, 2009; Michaelidou *et al* 2011; Jarvinien *et al*, 2012) They are also unable to recognise benefits deriving from the utilisation of those sites to B2B companies (Buehrer *et al*, 2005). This lack of 'know-how' as well as the perceived lack of benefits arising from B2B social media marketing, Buehrer *et al* (2005) claim, creates a negative attitude of marketing professionals towards the usefulness and usability of social media sites in the B2B context, and consequently it hinders the adoption of those sites in the B2B business environment (Michaelidou *et al*, 2011).

In addition to a lack of understanding of how to use social media sites in B2B marketing, a lack of control over communications via such sites also deters marketers from adopting them (Mangold and Faulds, 2009). This is because marketers being

unable to control the exchange of information online risk confidential information disclosure, which may have a profound impact on the future B2B business (Kaplan and Jaenlien, 2010; Simula *et al*, 2013). This view is further supported by Jussila *et al* (2014), who argue that the possibility of confidential information leakage discourages B2B marketers from using social media sites. As such, the two-way interaction recognized earlier as an advantage of social media sites in B2B sector may actually be perceived as a disadvantage, which seriously affects marketers' perception of social media sites usability in the B2B environment (Nordlund *et al*, 2011),

Finally, Swani and Brown (2012) show that there is a common belief among B2B marketing professionals that social media sites do not fit with the nature of the B2B sector, where industrial partners are highly involved in the buying process. According to marketers, B2B partners require face-to-face interaction and the individual approach, which cannot be achieved online. The interpersonal nature of the online environment is therefore yet another factor which creates a negative perception of the usability of social media sites in B2B marketing. This in turn, prevents marketers from adopting social media sites for marketing.

Interestingly, in spite of the numerous barriers obstructing marketers' adoption and use of social media sites in the B2B environment, Van Den Bulte and Wuyt (2007), Michaelidou *et al* (2011), and most recently, Veldeman *et al* (2015) observe that some innovative marketers have established B2B firm social media presence and in fact many of them aim to further increase their investment in B2B social media marketing. Thus B2B marketers, slowly but steadily, are beginning to recognise the value of these sites for marketing (Swani *et al*, 2013) and thus they have started using these sites in support of their marketing strategies (Brennan and Croft, 2012). Despite this early adoption, however, the full potential of social media sites in B2B marketing

has not been fully exploited (Jussila *et al*, 2011; Jervanien *et al*, 2012). This, the literature suggests, is caused by marketers' perception of poor usability of these sites in the B2B context (Michaelidou *et al*, 2011). This relationship between the usability of social media sites and their adoption and use by B2B marketing professionals however has not been explained so far. This study aims to fill this gap identified in the literature. Specifically, this study aims to investigate the adoption of social media sites by B2B marketing professionals and to examine the factors stimulating the adoption and use of those sites in the B2B context. To achieve this objective, we develop a new research framework. This framework is based on the attitudes-intentions-actual behaviour paradigm and the Technology Acceptance Model (TAM). Furthermore, as the usability of social media sites is a factor hindering their adoption by B2B marketers, this study also aims to evaluate the adoption of social media sites from the perspective of those sites' usability. To this end, TAM is extended through the use of the Nielsen's (1993) Model of Attributes of System Acceptability (i.e. usability, usefulness and utility). The process of the hypothesis as well as research framework development is discussed next.

2.3. Hypothesis and research framework and development

To date, a variety of models have been employed to identify factors driving user's adoption of digital technologies including e-mail (e.g. Serenko, 2008), e-commerce (e.g. Srite and Karahanna, 2006; Yoon, 2009) and social media sites (e.g. Cheung *et al*, 2011; Lin and Lu, 2011). One stream of research has employed intention-based models, including Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), Technology Acceptance Model (TAM) (Davis, 1989), Theory of Planned Behaviour model (TPB) (Ajzen, 1991), Unified Theory of Acceptance and

Use of Technology (UTAUT) (Venkatesh *et al*, 2003) and UTAUT 2 (Venkatesh *et al*, 2012) to name a few. As Fishbein and Ajzen (1975) demonstrate through intention-based models, user behaviour (e.g. use of the technology) can be effectively predicted by intentions, and intentions are determined by attitudes towards the behaviour in question. Extensive empirical research confirms this causality in the context of adoption and use of various technologies (e.g. Davis *et al*, 1989; Venkatesh *et al* 2012), including online environment (e.g. Yoon, 2009) and social media sites (e.g. Rauniar *et al,* 2014). In this study, TAM is selected as a central pillar of the research framework. The reason for this choice is twofold. First, TAM, unlike any other intention-based model, was originally designed to predict users' adoption of technology in a workplace, and it has been successfully extended to aiding the understanding of online technologies' use (Moon and Kim, 2001). Its main use is for the evaluation of utilitarian motives (goal directed motives) in technology adoption, which is also the aim of this study. Specifically, we seek to assess factors driving marketers to adopt social media sites in the B2B sector. Secondly, the model has been widely applied in a number of contexts (Lee *et al*, 2003). Moon and Kim (2001), for instance, extended TAM for a World Wide Web adoption, Yoon (2009) employed TAM to assess e-commerce acceptance, Ryu *et al* (2009) deployed TAM in their assessment of users' attitudes towards video posts, and Rauniar *et al* (2013) used TAM to assess social media adoption (i.e. Facebook). Most recently Veldeman *et al* (2015) as well as Siamagka *et al* (2015) employed TAM to assess social media adoption by B2B companies. The foregoing studies confirm the high explanatory power of TAM.

Introduced by Davis (1989), TAM is based on the attitudes–intentions–actual behaviour paradigm. It assumes that attitudes towards behaviour (i.e. technology use)

influence users' intentions towards whether or not to use a particular technology. Intentions to use, in turn, result in technology usage. Previous studies (e.g. Davis *et al*, 1989; Venkatesh *et al*, 2003, Venkatesh *et al*, 2012) confirm that indeed behavioural intentions to use given technology are strong predictors of technology usage. Rauniar *et al* (2014) further verifies the impact of intentions on actual behaviour with reference to social media sites. Specifically, researchers (*ibid*) confirmed that social media sites usage is the result of an individual's intentions to use those sites. However, Jarvinen *et al* (2012) and Jussila *at al* (2011; 2014) argue that in the context of B2B marketing there exists a big gap between marketers' intended use of social media and their actual use, which they state has to be examined further. We aim to respond to this call and hence, we hypothesise that marketers' intentions to use (IUSE) social media sites for B2B marketing lead to actual behaviour (AU) and the use of those sites.

H1. Intentions to Use (IUSE) social media sites impact Actual Use (AU) of those sites for B2B marketing

According to TAM, intentions to use new technologies are influenced by two attitudes: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Davis (1989) defines PU as 'the individual's perception that using the new technology will enhance or improve job performance'. Thus, PU focuses on the individual's perception of whether the desired goal can be achieved while using particular technology. Nielsen's (1993) concept of Usefulness also refers to 'the issue of whether the system can be used to achieve desired goals'. Usefulness, in Nielsen's (1993) Model of Attributes of System Acceptability, is an important concept while

assessing practical acceptability of the ICT system or technology, such as social media sites. Similarly to TAM, it refers to utilitarian reasons for new technology adoption. As such, it can be assumed that the two terms 'PU' and 'Usefulness' are used interchangeably, as they both refer to the individual's perception of whether desired goals can be achieved through the use of particular technology.

Davis (1989) proposes that users' intention to adopt the technology is largely dependent on their assessment of the given technology's usefulness. This relationship between the perceived usefulness and users' intention to adopt the technology has been empirically verified by numerous studies (e.g. Braun, 2013; Lu *et al*, 2009); also in the context of social media sites' adoption (e.g. Kang and Lee; 2010). Furthermore, as revealed in the previous literature, the marketing professionals' perception of social media sites' usefulness in the B2B business context plays an important role while making an adoption decision (Buehrer *et al*, 2005; Veldman *et al*, 2015). In fact, according to Siamagka *et al* (2015), it is the B2B marketers' perception of social media sites' usefulness that stimulates the slowly but steady adoption of those sites. The marketers' perception of social media sites usefulness, in turn, is the result of increased realisation of advantages deriving form the utilisation of those sites for B2B marketing purposes (*ibid*). As it has been shown in the Section 2.2. however, apart from the advantages, B2B marketers are also aware of numerous obstacles, which might deter from the adoption and use of those sites. Michaelidou *et al* (2011) states that those obstacles shape the negative perception of social media sites' usefulness and as such they negatively impact B2B marketers' intention to adopt and use those sites. Based on those contradicting arguments, Jussila *et al* (2014) calls for empirical studies that would assess the role of usefulness in B2B marketers' adoption of social media sites. We aim to respond to this call and verify the relationship between social

media sites usefulness and B2B marketers' intentions to adopt and use those sites to achieve their marketing objectives. Consequently, we claim that the marketers' perception of usefulness (PUsefulness) of social media sites influences the intentions to use (IUSE) those sites for B2B marketing.

H2. Perceived usefulness (PUsefulness) of social media sites impacts intentions to use (IUSE) those sites for B2B marketing

In contrast to PU, PEOU refers to individuals' attitudes about the process leading to the desired goal, rather than the assessment of whether or not this goal can be achieved while using given technology. Specifically, PEOU is defined as 'the individual's perception that using a new technology will be free of effort' (Davis, 1989). With reference to social media, Rauniar *et al* (2014), defines PEOU as the assessment of 'how easy it is to use [social media sites] and how effective it is in helping [users] accomplish their social-media-related needs'. PEOU therefore concerns users' perception whether or not using particular a technology (e.g. social media sites) involves minimal effort in the process of goal achievement. Nielsen (1993) argues that users' assessment of the effort involved in technology use is directly related to their ability to use the relevant technology's functional elements. He states that 'the question [of] how well users can use that functionality' is a question of technology usability, which he simply terms 'Usability'. Comparing those two constructs; PEOU introduced in TAM and Nielsen's (1993) construct of Usability, it appears to be obvious that they both refer to the users' ability to use a new technology (and its functional elements), and thus the perception of effort involved in technology use in the process of desired goals attainment. Based on this

understanding we develop a new construct termed Perceived Usability (PUsability), which in the context of this study refers to the perception of whether social media sites users (i.e. marketing professionals) are capable of accomplishing B2B marketing objectives via those sites.

According to Lu and Yeung (1998) usability of Internet-enabled technologies is an important determinant of those technologies' acceptance and use. On the other hand however, the preceding review of the literature suggests that B2B marketers are reluctant to adopt social media sites in support of their marketing activities due to the perception of poor usability of those sites in the B2B context. Specifically, it has been argued that features of social media sites such as their interactive nature, enabling two-way communication with consumers, have a negative impact on the B2B marketing professional's opinion of usability of those sites in B2B marketing, which subsequently deters the adoption of those sites (Swani and Brown, 2012; Nordlund *et al*, 2013). This has been further verified by Jussila *et al* (2014), who note that legal contracts and intellectual property rights issues may limit the usability of social media in B2B marketing. Finally, the empirical research carried out by Siamagka and colleagues (2015) finds effort involved in social media use in B2B context (i.e. usability of social media) not to be a statistically significant adoption driver. This study also aims to verify those findings. Specifically, this study aims to assess if marketers' perception of social media sites usability (PUsability) has any influence on intentions to use (IUSE) those sites for B2B marketing.

H3. Perceived Usability (PUsability) of social media sites impacts intentions to use (IUSE) those sites for B2B marketing.

According to TAM, PEOU has a positive impact on PU (Davis, 1989). Thus the model builds on the assumption that the easier it is to use a given technology, the more likely it is to be regarded as being useful. This is because PEOU refers to the process leading to goal achievement, while PU assesses the final result of this process. Previous empirical research has confirmed this relationship (e.g. Xiao, 2010), and Siemagka *et al* (2015) verified it in the context of social media sites adoption by B2B marketing professionals. Following TAM and Siemagka *et al* (2015) findings, we therefore postulate that the marketers' perception of social media sites' usability for B2B marketing (PUsability) does not only influence intention to use (IUSE), but also impacts marketers' perceived usefulness (PUsefulness) of those sites for marketing purposes.

H4. Perceived usability (PUsability) of social media sites impacts perceived usefulness (PUsefulness) of those sites for B2B marketing

Usability is the focal point of Nielsen's (1993) Model of Attributes of System Acceptability. As revealed above, similarly to PEOU, it refers to users' ability to use given technology (and its functional elements) while achieving desired goals, which we termed PUsability to avoid interchangeable use of two terms. Despite apparent similarities between these two variables, Nielsen's (1993) concept of Usability is more complex than PEOU identified in TAM. This is because Nielsen (1993) recognizes that 'usability applies to all aspects of [a] system with which a human might interact'. As such it is not a one-dimensional concept but it has multiple components, which have not been documented in TAM. Specifically, Nielsen (1993)

recognizes five usability attributes: Learnability, Efficiency, Memorability, Errors, and Satisfaction.

Learnability is the most fundamental usability attribute as, according to Nielsen (1993), technologies should be easy to learn and understand in order to be used. However, Nielsen (1993) realises that learning is subject to both technology type and prior user experiences. Even though most technologies are 'easy-to-learn' and users do not need specific training in order to use them, there are some 'hard-to-learn' technologies which require extensive training prior to use. Furthermore, there are 'new' technologies, which require the user to either learn new skills or technologies, which require transfer of existing skills. For instance, users do not have to learn new skills to use technology-upgraded versions; they can transfer and apply previously learned skills. Similarly, users may already be familiar with the given technology in a different context, thus requiring application of the same skills rather than learning of new ones.

It can be assumed that social media sites are not 'hard-to-learn' technologies. In fact, Siamagka *et al* (2015) argues that among many other internet-enabled technologies social media are the least complex. Due to the lack of complexity of social media sites, their use does not require any advance training. On the contrary, social media users nearly instinctively discover how to use them for social interaction. Consequently, the application of those sites in the business context thus does not require learning but rather transfer of already acquired skills from a social to a business context. As such, it can be assumed that marketers' ability to learn to use social media is relatively high. This, however, is questioned by Buehrer *et al* (2005), who claim that B2B marketing professionals are reluctant to adopt social media sites, as their application in the business context requires training and upskill. Michaelidou

et al (2011) and Rollins *et al* (2014) confirm the findings of Buehrer *et al* (2005), and Jussila *et al* (2014) further add that marketers' lack of knowledge and understanding of social media sites application in B2B marketing affects those sites' adoption. As knowledge and understanding are the results of learning, technology learnability attributes appear to be important factors in the adoption and use of the technologies (Gefen and Straub, 2000). This is further verified by Obal and Lancioni (2013), who stress the importance of education and training in digital technologies (e.g. social media) use in industrial setting. We aim to verify this statement. Specifically, we aim to assess marketers' perception of social media sites learnability (LR), and its impact on perceived usability (PUsability) of those sites for B2B marketing.

H5: Learnability (LR) of social media sites impact perceived usability (PUsability) of those sites for B2B marketing

Nielsen (1993) postulates that once the user learns how to use given technology, a high level of productivity should be possible. According to Lou *et al* (2013) social media are indispensible to achieve company's productivity. To do so, Nielsen (1993) claims, the technology (i.e. social media sites) should be efficient to use in order for an individual to adopt it. Previous research has shown that the perception of technology efficiency plays an important role in their adoption and use (e.g. Edmondson *et al*, 2003). Gefen and Straub (2000) also confirm this, they argue that technology adoption is subject to effective and efficient task completion by the means of the given technology. This is also true in terms of social media sites adoption and its use in a business context as researchers argue that social media sites 'should be efficient in getting tasks done' to be adopted and used (Rauniar *et al*,

2014). This task can refer to targeting, consumer relationship management or branding where research confirms that social media sites can be used to accomplish those marketing objectives effectively and thus efficiently (Kapland and Haenlein, 2010; Moor *et al,* 2013). In order to test the relationship between social media sites efficiency and their adoption we follow Nielsen's (1993) argument. According to Nielsen (1993) individual's perception of technology efficiency impacts its usability. Thus we hypothesise that marketers' perception of social media sites efficiency (EFF) impacts their perception of those sites usability (PUsability) for B2B marketing.

H6: Efficiency (EFF) of social media sites impacts perceived usability (PUsability) of those sites in B2B marketing

Apart from the technology being easy to learn, it also must be easy to remember. Memorability (MM), Nielsen (1993) claims, is a particularly important usability attribute of occasionally used technologies. Users of those technologies should be able to easily memorize how to use them to fulfil a particular task. They should also be able to return to those technologies after a period, without having to learn how to use them again. As such, memorability seems to be an essential usability attribute of social media sites when used for marketing activities. These sites are used in parallel with offline marketing channels in a marketing multichannel strategy. They are not frequently used, but rather used intermittently in support of marketing activities (Mangol and Faulds 2009). Accordingly, usability of these sites for B2B marketing purposes depends on users' ability to memorize how to use them to achieve marketing objectives. However researchers stressing the importance of education, training and B2B marketing staff upskilling seem to question marketer's

understanding of how to use social media sites in the business context (Buehrer *et al*, 2005; Michaelidou *et al*, 2011; Obal and Lancioni, 2013; Rollins *et al*, 2014). To assess the role of memorability in social media sites adoption, we postulate that memorability (MM) of social media sites impacts marketer's perception of those sites usability (PUsability) in the B2B business context.

H7: Memorability (MM) of social media sites impacts perceived usability (PUsability) of those sites in B2B marketing

Using all technologies involves making errors. An error refers to any action that can hinder achievement of a desired goal. In order for the given technology to be adopted and used, the number of those errors must be low. Nielsen (1993) claims that users should make few errors while using the technology, and those errors should be easy to recover from, such that the user should be able to reach the desired goal despite an error occurrence. Furthermore, he stresses that 'catastrophic errors must not occur'. Those errors refer to failures, which are difficult to recover from, and which may have a profound impact on the users' goal achievement.

As shown in the literature review, B2B marketers' evaluation of the possibility of making a mistake, or in other words error, is perceived to be an important factor while making an adoption decision. Specifically, it has been shown that mistakes related for example to the possibility of confidential information disclosure may have a negative impact on the future B2B business and hence on marketers' intentions to adopt and use social media sites for B2B marketing (Kaplan and Jaenlien, 2010; Simula *et al*, 2013). This is also confirmed by Nordlund *et al*. (2011), which state that the possibility of an error can limit usability of social media in the B2B context, and

thus it can have a negative effect on those sites adoption. This study aims to assess this impact. Therefore following Nielsen (1993) we claim that errors (ERR) impact marketers' perception of usability (PUsability) of social media sites in B2B marketing.

H8: Errors (ERR) of social media sites impact perceived usability (PUsability) of those sites for B2B marketing

In addition to usability attributes leading to goal achievement, Nielsen (1993) claims that technology usability also depends on users' subjective assessment of satisfaction and pleasure derived from using given technology. Nielsen (1993) therefore echoes other researchers who state that apart from the utilitarian motives for technology adoption; hedonic value of technology also has to be recognized (Davis *et al*, 1992; Venkatesh *et al*, 2012). Nielsen (1993) states that satisfaction 'can be an especially important usability attribute for systems that are used on a discretionary basis in a non-work environment'. For such technologies, the perception of entertainment is more important than, for example, the speed of task completion and the desired goal achievement. This is in line with previous research which show that perceived ease of deriving fun and pleasure from the use of a technology are significant drivers for its adoption (David *et al*, 1989; van der Heijden, 2004). This is because completion of work related tasks with pleasure, enjoyment and satisfaction should improve work productivity and performance (Stephenson, 1967). Davis *et al* (1992) and later Lin and Lu (2011), confirm this showing that intrinsic enjoinment, which derives from using technology in work-type behaviour promotes behavioural intentions.

Moon and Kim (2001) find that enjoyment, and by extension satisfaction, is the key factor for internet acceptance. Furthermore, Sledgianowski and Kulviwat (2009) as well as Kang and Lee (2010) while considering social media as 'pleasure-oriented technologies' confirm that the user's intention to use those technologies is subject to perceived enjoyment those technologies offer. As social media sites are most commonly used for social interaction the perception of their usability in a business context should heavily depend on hedonic motives for technology acceptance and in particular users' subjective satisfaction deriving from those sites' usage. To assess this relationship, we postulate that marketers' satisfaction (SAT) impacts perceived usability (PUsability) of social media sites in a B2B context.

H9: Satisfaction (SAT) of using social media sites impacts perceived usability (PUsability) of those sites for B2B marketing.

Finally, apart from the assessment of users' ability to use particular technology (and its functional elements) in the process of goal achievement (PUsability), as well as the evaluation of whether those goals can be achieved by the means of the given technology (PUsefulness), Nielsen (1993) postulates that adoption of technology also depends on its Utility. Utility 'is the question of whether the functionality of the system can do what is needed' (Nielsen, 1993). Thus it assesses whether the technology and its functional elements fit particular tasks. As such, user perceptions of utility (PUtility) can differ in accordance to the technology type, task and goal assigned. For example, PUtility of educational technology refers to the perception of whether the user can learn and acquire knowledge by the means of the technology, while PUtility of entertainment technology concerns users' perception of

enjoyment and pleasure derived from the technology use. Accordingly, in the context of this study, PUtility refers to marketers' perception of whether, via social media sites, B2B marketing objectives can be achieved.

Lin and Lu (2011), following the previous studies (e.g. van der Heijden, 2004; Lin and Bhattacherjee, 2008) postulate that 'the individual adopts information technology because he/she perceives the possibility of obtaining utility (…) from it' (p.1153). This is also confirmed by an earlier study by Lee *et al* (2003) who recognises perception of technology utility as necessary in the adoption process. The role of social media utility in B2B context however is questioned by Jarvinen *et al* (2012), who argue that B2B marketers might encounter various barriers to the utilisation of digital technologies, which may prevent those technologies adoption and use. This is further confirmed by Jussila *et al* (2014), who describe utilisation of social media in B2B marketing as difficult. To assess the role of utility we follow Nielsen (1993), and we postulate that marketers' perception of social media sites utility (PUtility) influences intentions to use (IUSE) those sites for marketing activities in the B2B sector. Furthermore, following Chang (2010), who indicates that the technology task fit (i.e. technology utility) positively impacts users' perception of the technology usefulness, we hypothesise that PUtility also influences PUsefulness. This is because the concept of PUtility assesses the suitability of the given technology to the task of goal attainment, while PUsefulness considers the likelihood of achieving those goals. Thus, we claim that if the technology is believed to be appropriate to achieve specific goals (PUtility), it is also considered to be useful (PUsefulness).

H10. Perception of utility (PUtility) of social media sites impacts intention to use (IUSE) those sites for B2B marketing

H11. Perception of utility (PUtility) of social media sites impacts perceived usefulness (PUsefulness) of those sites for B2B marketing.

Based on these arguments this study aims to assess the factors driving marketers' adoption and use of social media sites in the B2B context. Specifically, this research intends to assess the usability perspective of social media sites' adoption by B2B marketing professional. In order to achieve this research objective, hypotheses are drawn from two models: Davis' (1989) Technology Acceptance Model, and Nielsen's (1993) Model of the Attributes of System Acceptability. The research hypotheses are visually presented in the research framework displayed in Figure 1.

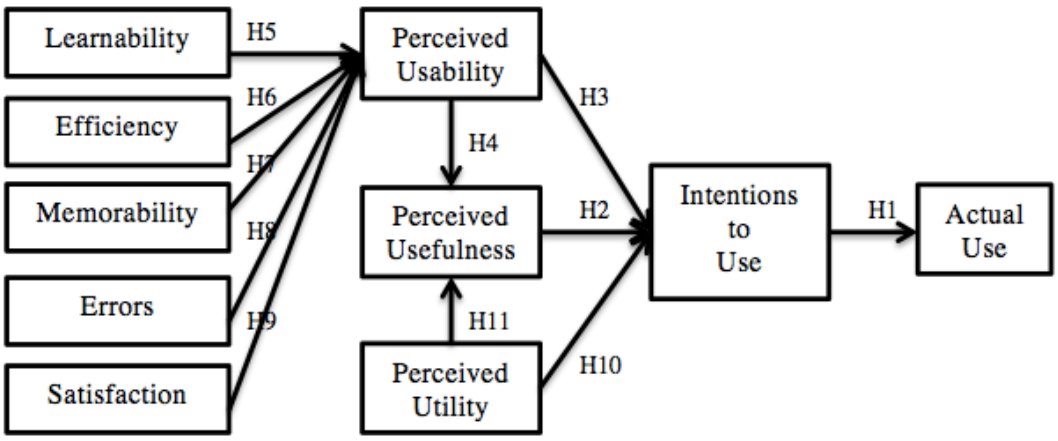

Figure 1. Research framework

3. Research methodology

3.1. Questionnaire development and data collection

In order to test the hypotheses and the research model presented in Figure 1, we develop a questionnaire survey, divided into two parts. The first part aims to

screen a sample of respondents, selecting only marketing professionals who use social media sites for B2B marketing. According to Nielsen (1993), only technology users, who use the given technology for a specific task (e.g. B2B marketing), can assess its usability. The first part of the questionnaire also aims to assess some basic demographic characteristics of the respondents (i.e. B2B marketing professionals) as well as business sector the B2B company operates in.

The second part of the questionnaire aims to test the research hypotheses. It includes items measuring the extent to which users agree or disagree with statements related to each construct. All questionnaire items are measured on the 7-point Likert scale. Adopting previously developed items generates the second part of the questionnaire, or the items are developed based on construct definition. Accordingly, AU is adopted from the study by Wu and Wang (2005), IUSE is adopted from the study by Yoon (2009) and PUsefulness and PUsability are adopted from the study by Yoon (2009) and Srite and Karahanna (2006), as indicated in Appendix 1. The items of PUtility, LR, EFF, MM, ERR and SAT constructs are developed on the basis of their definitions or interpretations provided by Nielsen (1993) and other scholars, as showed in the Appendix 2.

Once the initial questionnaire is generated all researchers carrying out the study proceed with refining the instrument. Changes are then made to ensure that the items capture the desired phenomena. Initially, the questionnaire was developed in English, but in order to ensure a high response rate a Chinese native speaker translated it into Chinese. Additionally, the back-translation method suggested by Green and White (1976) is then applied to avoid linguistic bias.

We engage an external data collection company to distribute the questionnaire to B2B companies operating in China. The questionnaire was distributed via email

with the aim of acquiring approximately 200 responses. Specifically individuals working in marketing departments of B2B organizations, which use social media sites, are targeted. Initially, 220 responses are collected but only 200 questionnaires are completed in full. Among 200 usable questionnaires all respondents confirm that they work in a B2B organization and that they are responsible for marketing activities. Among those 200 respondents, 199 confirm that their firms use social media sites to conduct marketing activities. One respondent advise that his/ her company does not use social media sites for marketing and thus this response is removed from the dataset. Eighteen respondents report that even though they are involved in marketing activities in their organizations and their company uses social media sites for B2B marketing, they do not use social media sites for marketing purposes themselves. Subsequently, those responses were also removed from the study, resulting in 181 usable responses, which are then used for further analysis.

4. Data Analysis

4.1. Demographic characteristics of respondents

Among the 181 respondents, approximately 51% are male and 49% are female. The majority of respondents are aged between 25 and 35 years old (68%), which is representative of the group identified as heavy users of social media sites in China. 23% of respondents are between 35 and 45 years old and 4% and 3% are in the 45- 54 and 18-24 years old groups respectively. The respondents work for B2B companies operating in a range of sectors. Forty-four respondents (24.3%) work for the B2B organization operating in computer/ Internet/ e-commerce sector, 19 (10.5%) work in financial sector. Fifteen (8.3%) and 14 respondents (7.7%) work in education/ training and construction/ real estate sectors, respectively. The remainder of the

respondents work for B2B organisations operating in sectors such as trade/wholesale/retail, logistics/ transportation/warehousing and hotel/ restaurant/ tourism sectors. The demographic characteristics of B2B marketing professionals as well as B2B sectors their company operates in are presented in Table 1.

		Frequency	Percentage
Gender	Male	92	50.8
	Female	89	49.2
Age	18-24	6	3.3
	25-34	123	68.0
	35-44	42	23.2
	45-54	8	4.4
	55-64	2	1.1
Sector of company ’s main area of operation	Computer/Internet/E-commerce	44	24.3
	Financial industry/Banking/Insurance	19	10.5
	The government/Non-profit agencies/Public utilities	13	7.2
	Construction/ Real estate industry	14	7.7
	Education and training	15	8.3
	The professional services (Legal/Accounting/Consulting)	7	3.9
	Trade/Wholesale/Retail industry	12	6.6
	Manufacturing/ Instrument equipment	9	5.0
	Logistics/ Transportation/ Warehousing	5	2.8
	Hotel/ Restaurant/ Tourism	6	3.3
	Media/ Public Relations (Broadcast/ Advertising)	7	3.9
	Pharmaceutical/ Medical/ Biological/ Health care industry	13	7.2
	Entertainment/ Cultural-related/ Leisure	4	2.2
	Printing/ Publishing/ Paper making and paper products	1	0.6
	Arts and crafts/ Collection (Gift/ Toys/ Arts/ Collections/ Luxury)	1	0.6
	Energy/ Electrical/ Mining/ Geology/ Oil processing	5	2.8

	Animal husbandry and fishery	2	1.1
	Others	4	2.2

Table 1. Demographic characteristics of B2B marketing professionals taking part in the study

4.2. Reliability, validity and model fitness

Prior to testing our research hypotheses, we test the validity and reliability of the acquired data. To assess the reliability of the data, we run Cronbach's Alpha. The results confirm reliability of all measured items. All tested items are shown to meet the guidance, i.e. exceeding the required 0.70 level (see Table 2).

To test the validity of measured items, factor loadings were first examined. Item validity is considered acceptable if factor loadings of measured items exceed the minimum level of 0.50, and ideally 0.70. All items meet the guidance levels, exceeding the desired level of 0.70.

In addition to the assessment of factor leadings, we verify item validity through Composite Reliability (CR) and Average Variance Extracted (AVE). The tests reveal that all items meet recommended AVE value >0.50 and CR value of >0.60, thus confirming high validity of all tested items. The results of validity and reliability checks are presented in Table 2.

	Cronbach's Alpha	Average Variance Extracted (AVE)	Composite Reliability (CR)
AU	0.819	0.643	0.607
IUSE	0.846	0.627	0.760
PUsefulness	0.905	0.975	0.917
PUsability	0.900	0.699	0.763
PUtility	0.896	0.770	0.825
LR	0.915	0.954	0.912
EFF	0.841	0.672	0.805
MM	0.839	0.610	0.792
ERR	0.825	0.678	0.811
SAT	0.836	0.681	0.814

Table 2. Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE)

An effort was also made to ensure that the data does not suffer from common method bias, which according to Podsakoff *et al* (2003) is common in behavioural research. Thus in order to ensure that common method bias does not exist in the study we take steps to ensure the respondents' anonymity. All respondents are asked to mark the answer they consider correct and appropriate. Furthermore, we test the data using Harman's single factor test, which confirms that the common method bias does not exist in the study. Harman's single factor test reveals that single item does not to exceed 50% of the variance (Podsakof *et al* 2003; Bradford, 2014).

Once we verify that the data does not suffer from common method bias, the fitness of the research model is then studied. To determine model fitness, the following indices are examined: Chi-squared ($\chi 2$); degrees of freedom (df); Chi-squared/degrees of freedom ($\chi 2$/df); the root mean square error of approximation (REMSEA); the comparative fit index (CFI); the Tucker Lewis index (TLI); the parsimony normed fit index (PNFI); and the parsimony goodness of fit index (PGFI). According to Bagozzi and Yi (1988), Browne and Cudeck (1993), Arbuckle and Wothke (1999), Byrne (2001), Hoang *et al* (2006) and Hair *et al* (2010), the model

and the data have good fit if $\chi 2$ /df ≤ 3, RMSEA≤ 0.08, CFI≥ 0.90 and TLI>0.90, PNFI>0.50 and PGFI>0.50. As shown in Table 3, most indices of fit meet their recommended values apart from CFI and TLI, which might be due to sample size limitations (see Bollen, 1990; Cheung and Rensvold, 2002). Those indices of fit, however, are in a short range of the recommended value of 0.90 (CFI=0.845 and TLI=0.820), thus it can be assumed that relatively good fitness of the research model has been reached.

Indices of fit	
Chi-squared ($\chi 2$)	1664.629
Degrees of freedom (df)	742
Chi-squared/degrees of freedom ($\chi 2$/df)	2.243
RMSEA	0.083
CFI	0.845
TLI	0.820
PNFI	0.652
PGFI	0.596

Table 3. Model fitness

4.3. Structural Equation Modelling

On the basis of the above analysis, it can be confirmed that the data collected to test the research hypothesis is reliable and can thus be used to test the research framework. To do so, and to examine the stated hypotheses, we run a Structural Equation Modelling (SEM). The results are presented in Table 4.

H1	IUSE→ AU	0.372***
H2	PUsefulness→ IUSE	0.423***
H3	PUsability→ IUSE	0.148*
H4	PUsability→ PUsefulness	0.015
H5	LR→ PUsability	0.407**
H6	EFF→ PUsability	-0.802***
H7	MM→ PUsability	0.622*
H8	ERR→ PUsability	0.145
H9	SAT→ PUsability	0.121
H10	PUtility→ IUSE	0.180*
H11	PUtility→PUsefulness	0.631***

Table 4. SEM (*** p< 0.001, ** p<0.01, * p<0.1)

As can be seen from Table 4 above, marketers' intentions to use social media sites for B2B marketing result in actual use of those sites. SEM reveals that there is a statistically significant relationship at $p<0.001$ between intentions to use social media sites (IUSE) and actual use (AU) of those sites, thus supporting H1. Similarly, a statistically significant relationship (at $p<0.001$) is shown between perceived usefulness of social media sites (PUsefulness) and intentions to use those sites (IUSE) for B2B marketing, which supports H2. There is also a significant relationship at $p<0.1$ between the perceived usability (PUsability) and intentions to use (IUSE), which supports H3. Interestingly, there is no statistically significant relationship between the perceived usability of social media sites (PUsability) and the perceived usefulness (PUsefulness) of those sites for B2B marketing. Accordingly, H4 is rejected. The relationships between the marketing professionals' perception of usability (PUsability) of social media sites and two usability attributes; learnability (LR) and memorability (MM) are statistically significant at $p<0.01$ and $p<0.1$, respectively. Thus H5 and H7 are supported. The relationship between the perceived usability (PUsability) and efficiency (EFF) is significant at $p<0.001$ but as it is in the opposite direction to that hypothesized H8 is rejected. The relationships between the

perceived usability (PUsability) and errors (ERR) as well as satisfaction (SAT) are not significant. As such H8 and H9 are rejected. Finally, there is a significant relationship between the perceived utility (PUtility) and intention to use (IUSE) social media sites for marketing activities in the B2B context and the marketers' perception of usefulness (PUsefulness) of those sites. Specifically, there is a significant relationship (at $p<0.1$) between perceived utility of social media sites (PUtility) and marketing professionals' intention to use (IUSE) those sites for B2B marketing, which supports H10. The relationship between perceived utility (PUtility) and perceived usefulness (PUsefulness) of social media sites is also statistically significant at $p<0.001$, hence H11 is supported.

5. Conclusion

5.1. Discussion

In this study, we empirically test a research framework developed by combining two models: the Davis' (1989) Technology Acceptance Model (TAM), and the Nielsen's (1993) Model of the Attributes of System Acceptability. This approach is aimed at assessing the usability perspective of B2B marketing professionals' adoption of social media sites' for marketing. By doing so we fill the gaps identified in the literature regarding factors driving the adoption of social media sites in the B2B sector. In order to test the research framework and achieve our research objectives we develop a questionnaire survey, targeted at marketers using social media sites for B2B marketing purposes. The results obtained from 181 respondents expose several interesting research findings.

Specifically, the research findings show that the marketers' intention to use social media sites for B2B marketing results in the adoption and use of those sites.

This finding therefore confirms Fishbein and Ajzen's (1975) assertion that behavioural intentions are strong predictors of actual use of the technology (e.g. social media sites). Furthermore, we find that B2B marketers' perception of social media sites' usefulness strongly influences intentions to use those sites. This is in line with the assumption originally demonstrated in TAM. Similarly, the relationship between users' evaluation of effort involved in technology use (i.e. usability) and intention to use a particular technology demonstrated in Davis's TAM as well as Nielsen's Model of Attributes of System Acceptability has been verified. Our empirical investigation proves that marketers' capability to use social media sites and their perception of the effort involved in using those sites influences intentions to use social media sites for B2B marketing. The research findings however, do not confirm a relationship between the influence of B2B marketing professionals' perception of ease of use of given technology and its usefulness, as presented in TAM. Throughout the course of this study no significant relationship is identified between marketers' perception of usability of social media sites and their usefulness. However, we are able to report a significant relationship between B2B marketers' perception of utility of social media sites and the perception of them being useful for B2B marketing. Interestingly, the research findings reveal the key role of two usability attributes as identified by Nielsen (1993). This research reveals that both social media sites' learnability and memorability attributes influence marketers' perception of those sites' usability in the B2B context. This finding confirms Nielsen's statement that technologies in order to be adopted and used have to be easy to learn and understand. Furthermore, the findings also suggest that occasionally used technologies (such as social media sites in B2B marketing) have to be easy to remember in order to be adopted for use (Nielsen, 1993). The role of other usability attributes, as identified by Nielsen (1993)

however could not be confirmed. Specifically, the findings do not show any significant relationship between errors and satisfaction and B2B marketing professionals' perception of usability of social media for marketing. This perhaps implies that the possibility of making a mistake does not influence marketers' decision on whether to adopt social media sites for B2B marketing activities or not. Similarly, marketers' perceptions of hedonic values of social media sites and satisfaction deriving from those sites use might play an important role in the markets' use of those sites for personal reasons. However, it does not play any key role in the adoption of social media sites beyond the personal sphere. Interestingly, the relationship between the efficiency and usability of social media sites is found to be significant but its direction is opposite to that envisaged in our hypothesis. It can be assumed therefore that contrary to expectations B2B marketing professionals do not expect to achieve a high level of productivity while using social media sites for B2B marketing. This however requires further investigation.

Drawing from the above research findings it can be concluded therefore, that the adoption of social media sites for B2B marketing is driven by the marketers' perception of those sites' usefulness, usability and utility. The usefulness of the social media sites is directly related to the assessment of whether the sites are suitable avenues for conducting marketing activities. Users' ability to use those sites for marketing in turn depends on those sites' learnability and memorability attributes.

5.2.Theoretical and managerial contribution

The results of our study have important implications for both theory and practice. Firstly, we have filled gaps identified in the literature regarding factors driving the adoption of social media sites in the B2B context. Thus, we addressed

Jasilla *et al*'s (2014) call for studies that investigate factors driving actual use of social media sites in the B2B context. We also examine the adoption of Chinese market-specific social media sites. Hence, we address the call for studies that examine social media sites adoption in B2B sector in global markets (Brennan and Croft, 2012).

Secondly, we have extended the current technology acceptance research stream by combining two models: TAM and the Model of the Attributes of System Acceptability. We show that TAM and Nielsen's (1993) model are not unconnected, but that they rather complement each other. Specifically, we show that the concept of PU in TAM refers to Usefulness by Nielsen (1993), as they both refer to the perception of whether desired goals can be achieved through the means of given technology. Similarly, PEOU as identified in TAM, and Nielsen's (1993) concept of Usability, both denote the users' ability to use a given technology in the process of goal achievement. By combining these two models we develop a new research framework, which investigates the adoption of technologies, such as social media sites, from the usability perspective.

Thirdly, by integrating Nielsen's (1993) model into TAM, we extend the original TAM and validate attitudes-intention-actual behaviour paradigm. Thus our model, apart from assessing users' perception of technology usefulness and usability (or in other words the perceived ease of use), also examines users' perception of technology utility, which infers the fit of the given technology for the task of goal achievement. Furthermore, our model recognizes that the perception of the users' capability to use technology is not a one-dimensional concept; instead it has multiple components. This is because it refers to all aspects of technology with which the user may interact. Thus following Nielsen (1993), we extend TAM with five usability

attributes: Learnability, Efficiency, Memorability, Errors, and Satisfaction. The combination of Davis's (1989) and Nielsen's (1993) models allows us to better understand factors driving users' adoption of technology. In our study, it allows us to examine factors driving the adoption of social media sites by B2B marketing professionals.

The empirically tested new framework developed in this study provides some interesting insights into the factors driving the adoption and use of social media sites by B2B marketing professionals. The investigation reveals that the adoption and use of social media sites for B2B marketing is subject to marketers' perception of the usefulness, usability and utility of social media sites. Specifically, our study has shown that the marketers' intentions to use social media sites for B2B marketing results in the adoption and use of those sites. Thus, our research confirms Rauniar *et al*'s (2014) findings, which show that the intention to use social media sites is a strong predictor of those sites' usage. We evince that the intention to use social media sites is influenced by users' perception of those sites usefulness. This finding is also consistent with previous studies (e.g. Brennan and Croft, 2012; Braun, 2013; Verdman *et al*, 2015), which indicate that the perception of technology usefulness drives its adoption. Interestingly, the research findings have shown that usability, which refers to users' capability of accomplishing B2B marketing objectives via social media sites, plays an important role in influencing the intention to use and the subsequent usage of those sites. This is inconsistent with previous research (e.g. Swani and Brown, 2012; Nordlund *et al*, 2013) suggesting that the perception of poor usability might deter social media sites' adoption in the B2B context. Furthermore, our study demonstrates that this perception of usability is due to the marketers' perception of whether the use of social media sites for B2B marketing is easy to learn

and understand as well as whether the marketing professionals can easily memorise how to use those sites for B2B marketing purposes. Finally, our empirical investigation reveals that B2B marketers' intentions to use social media sites are subject to utility. Utility, which refers to the perception of the suitability of social media sites to B2B marketing goals attainment, has some impact on usefulness – the likelihood of those goals being accomplished.

The above research findings suggest that if B2B marketing professionals wish to adopt social media sites for marketing, they must focus on their perception concerning usability, usefulness and utility of social media sites in the B2B context. Specifically, this research reveals that B2B marketing professionals' intention to use those sites for marketing purposes results in those sites' use. Those intentions to use social media sites in B2B marketing are directly related to the perception of those sites usefulness, usability and utility. Hence, to increase behavioural intentions and subsequently stimulate the use of social media sites, marketers' perception of usefulness, utility and usability of those sites has to be amplified. This can be effectively done once marketers' perception of their ability to use social media sites is improved, alongside the assurance that social media sites do represent suitable marketing channels through which B2B marketing goals can be achieved. We therefore echo Jarvanien *et al*'s (2012) recommendation that 'B2B companies should update their capabilities with respect to digital marketing [social media marketing] usage'. This can be achieved by continuous reassurance of social media sites' suitability in the B2B context. B2B marketing professionals can particularly benefit from training focused on the application of social media sites in B2B marketing. Such training will improve and/ or refresh marketers' social media marketing skills and abilities, which subsequently will enhance their perception of those sites' usability in

the B2B context. This is because the research findings show that marketers' perception of usability is due to learnability and memorability attributes. Finally, it is interesting to note, that marketing professionals do not seem to expect to achieve high levels of productivity while using social media sites for B2B marketing purposes. On the contrary, our research findings indicate that marketers are willing to adopt and use social media sites even though their efficiency of accomplishing particular marketing task might be low. B2B companies should therefore perhaps not place an emphasis efficiency of particular marketing tasks attainment via social media sites since this does not rank highly in the marketing professionals' view.

5.3. Limitations and recommendations

This research suffers from some limitations, which open avenues for future studies. First, TAM is extended by combining concepts of practical acceptability, as identified in Nielsen's (1993) model. This is because the study aims to assess utilitarian motives (goal directed motives) for social media adoption. Apart from practical acceptability however, Nielsen (1993) also recognises social acceptability of technology, which is beyond the scope of this research project. This is because the impact of social acceptability on social media sites adoption is likely to be subject to culture (i.e. Chinese culture), which is not the focus of this research (see Lowry *et al*, 2010; Chang and Zhu, 2011; Men and Tsai, 2012). Further studies acknowledging social acceptability of technologies and the impact of culture are therefore encouraged.

Contrary to expectations, our empirical investigation reveals significant but negative relationship between marketers' perception of social media sites efficiency and perceived usability. This indicates that B2B marketing professionals do not

expect to achieve high levels of productivity while using social media sites for marketing purposes. Further studies are encouraged to fully explore the relationship between efficiency and the adoption of social media sites for B2B marketing.

Additionally, our research model has been tested for factors driving B2B marketers' adoption of Chinese social media sites. Therefore the generalization of this study to other countries needs to be interpreted carefully. We welcome studies, which examine our research framework in other contexts, e.g. western countries where the use of sites such as Facebook and Twitter is not restricted.

Finally, some of the indicators of model fitness do not attain their recommended values in this study. This can be related to the limitation of sample size (see Bollen, 1990; Cheung and Rensvold, 2002). The authors acknowledge this as a limitation of the study, however as those indicators are in a short range of the recommended minimum values a relatively good fitness level is attained. Nevertheless, further studies that may improve model fitness of the indicators are welcome.

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Appendix 1. Questionnaire development

Actual Use (AU)
1. How often do you use social media sites for B2B marketing? *
2. How many times have you used social media sites for B2B marketing in the last 6 months?*
Intention to use (IUSE)
1.Given the chance, I intend to use social media sites for B2B marketing**
2.I will frequently use social media sites for B2B marketing **
3.I am very likely to provide social media sites with the information it needs to better conduct B2B marketing **
Perceived Usefulness (PUsefulness)
1.Using social media sites enhances my productivity while conducting B2B marketing ***
2.Social media sites are useful for conducting B2B marketing **
3.Using social media sites enhances my effectiveness in conducting B2B marketing ***
4.Using social media sites improves my performance in conducting B2B marketing ***
5.Social media sites enable me to conduct B2B marketing faster**
Perceived Usability (PUsability)
1.It is easy to become skillful in using social media sites for B2B marketing ***
2.Social media sites are easy to use for B2B marketing **
3.I find it easy to get social media sites to do what I want them to do while conducting B2B marketing ***
4.My interaction with social media sites is clear and understandable while conducting B2B marketing **
5.Learning to operate social media sites for B2B marketing is easy***

Questionnaire items: * adopted from Wu and Wang (2005) ** adopted from Yoon (2009), *** adopted from Srite and Karahanna (2006)

Appendix 2. Questionnaire items developed on the basis of construct definitions.

Utility (PUtility)
According to Nielsen (1994) utility of the technology is defined as the extent to which the given technology provides the right kind of functionality to help users to perform relevant tasks (e.g. marketing activities) 1. Social media sites provide the right kind of functionality to help conducting B2B marketing
Utility of the technology is often evaluated with reference to the assessment whether while using the given technology desired goals can be met (Nielsen, 1993) 2. Goals of B2B marketing can be met while using social media sites
Utility of the technology does not only refer to hard work but also 'soft' outcomes of the technology use (Nielsen, 1993). The 'soft' outcomes of social media sites are related to the perception whether marketing objectives can be achieved as well as the assessment of benefits deriving from the technology use and costs involved with its use (Kraur *et al,* 1998) 3. Social media sites features support B2B marketing 4. Social media sites features enable conducting B2B marketing effectively 5. Using social media sites I can minimalise cost while conducting B2B marketing 6. Social media sites are appropriate to conduct B2B marketing
Learnability (LR)
According to Nielsen (1993) the technology should be easy to learn and understand, so that it should be easy for the user to get their task executed using the given technology 1. It is easy to learn how to use social media sites to accomplish B2B marketing goals 2. It is easy to understand how to use social media sites to accomplish B2B marketing goals 3. It is easy to execute B2B marketing goals using social media sites
Nielsen (1993) claims that the common way to measure system learnability is to assess whether users are able to complete the task successfully using the given technology and time they needed to do so 4. I am able to complete B2B marketing goals successfully using social media sites 5. Using social media sites I can complete B2B marketing goals within required timeframe
Efficiency (EFF)
According to Nielsen (1993) technology should be efficient to use; the given technology should enhance high levels of productivity

1. It is efficient to use social media sites for B2B marketing
2. Social media sites enhance high level of productivity while conducting B2B marketing

Memorability (MM)

The technology should be easy to remember, so that the user is able to return to the given technology after some period of not using it (Nielsen, 1993)

1. It is easy to remember how to use social media sites for B2B marketing
2. I am able to return to social media sites and use it for B2B marketing after some period of not using it
3. I am confident that I can use social media sites for B2B marketing in the future

According to Nielsen (1993) there were two ways to measure technology memorability; (1) to ask users to use the system after some period of not using it and (2) conduct a memory test repeat series of commands that do certain things

4. I am able to repeat B2B marketing activities using social media sites

Errors (ERR)

The technology should have a low error rate, so that the user makes few errors while using the given technology or if the user makes errors he/ she can easily recover from them. Furthermore, catastrophic errors do not occur (Nielsen, 1993)

1. I make few errors while using social media sites for B2B marketing
2. If I make errors using social media sites for B2B marketing I can easily recover from them.
3. Catastrophic errors do not occur while using social media sites for B2B marketing

Satisfaction (SAT)

The technology should be pleasant to use, so that users are subjectively satisfied when using it

1. Social media sites are pleasant to use for B2B marketing
2. I am satisfied when using social media sites for B2B marketing
3. I like using social media sites for B2B marketing